

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1-56. Canceled.

57. (Currently amended) An alkaloid isolated from an alkaloid poppy plant transformed or transfected with a polynucleotide comprising the coding region of SEQ ID NO:10 ~~or a variant or truncated fragment thereof wherein said variant or truncated fragment thereof encodes a cytochrome P-450 reductase enzyme,~~ and wherein said plant has altered expression of the cytochrome P-450 reductase enzyme and wherein said isolated alkaloid is morphine, codeine, oripavine, or thebaine.

58. (Currently amended) An alkaloid according to claim 57 selected from the group consisting of morphine, codeine, ~~oripavine~~ and thebaine.

59. (Currently amended) A method for the production of ~~a poppy plant alkaloids~~ alkaloid, comprising the steps of:

a) harvesting capsules of an alkaloid poppy plant transformed or transfected with a polynucleotide comprising the coding region of SEQ ID NO:10 ~~or a variant or truncated fragment thereof wherein said variant or truncated fragment thereof encodes a cytochrome P-450 reductase enzyme,~~ to produce a straw, where the poppy plant is such a plant that the straw has a higher or different alkaloid content when compared to the straw obtained from a poppy plant which has not been transformed or transfected; and

b) chemically extracting the ~~alkaloids~~ alkaloid from the straw, wherein the alkaloid is morphine, codeine, oripavine, or thebaine.

60. (Currently amended) A method for the production of ~~a poppy alkaloids~~ alkaloid comprising the steps of:

a) collecting and drying the latex of the immature capsules of an alkaloid poppy plant transformed or transfected with a polynucleotide comprising the coding region of

SEQ ID NO:10 ~~or a variant or truncated fragment thereof wherein said variant or truncated fragment thereof encodes a cytochrome P-450 reductase enzyme~~, to produce opium, where the poppy plant is such a plant that the opium has a higher or different alkaloid content when compared to the opium obtained from a poppy plant which has not been transformed or transfected; and

b) chemically extracting the ~~alkaloids~~ alkaloid from the opium, wherein the alkaloid is morphine, codeine, oripavine, or thebaine.

61. (Currently amended) A method according to claim 59, wherein the alkaloid is selected from the group consisting of morphine, codeine, ~~oripavine~~ and thebaine.

62. (Currently amended) A method according to claim 60, whereas the alkaloid is selected from the group consisting of morphine, codeine, ~~oripavine~~, and thebaine.

63. (New) A method according to claim 57 wherein the polynucleotide comprises SEQ ID NO:10.

64. (New) A method according to claim 59 wherein the polynucleotide comprises SEQ ID NO:10.

65. (New) A method according to claim 60 wherein the polynucleotide comprises SEQ ID NO:10.